

158 FERC ¶ 61,030  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 40

[Docket No. RM16-7-000; Order No. 835]

Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing  
Contingency Event Reliability Standard

(Issued January 19, 2017)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Commission approves Reliability Standard BAL-002-2 (Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event) submitted by the North American Electric Reliability Corporation (NERC).

Reliability Standard BAL-002-2 is designed to ensure that balancing authorities and reserve sharing groups balance resources and demand and return their Area Control Error to defined values following a Reportable Balancing Contingency Event. In addition, the Commission directs NERC to develop modifications to Reliability Standard BAL-002-2 to address concerns regarding extensions of the 15-minute period for Area Control Error recovery and contingency reserve restoration. The Commission also directs NERC:

(1) to collect and report on data regarding additional megawatt losses following Reportable Balancing Contingency Events during the Contingency Reserve Restoration Period; and (2) to study and report on the reliability risks associated with megawatt losses above the most severe single contingency that do not cause energy emergencies.

EFFECTIVE DATE: This rule will become effective [**INSERT DATE 60 days after publication in the FEDERAL REGISTER**].

FOR FURTHER INFORMATION CONTACT:

Enakpodia Agbedia (Technical Information)  
Office of Electric Reliability, Division of Reliability Standards  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426  
Telephone: (202) 502-6750  
[Enakpodia.Agbedia@ferc.gov](mailto:Enakpodia.Agbedia@ferc.gov)

Mark Bennett (Legal Information)  
Office of the General Counsel  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426  
Telephone: (202) 502-8524  
[Mark.Bennett@ferc.gov](mailto:Mark.Bennett@ferc.gov)

SUPPLEMENTARY INFORMATION:

158 FERC ¶ 61,030  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;  
Cheryl A. LaFleur, and Colette D. Honorable.

Disturbance Control Standard—Contingency Reserve      Docket No. RM16-7-000  
for Recovery from a Balancing Contingency Event  
Reliability Standard

ORDER NO. 835

FINAL RULE

(Issued January 19, 2017)

1. Pursuant to section 215 of the Federal Power Act (FPA),<sup>1</sup> the Commission approves Reliability Standard BAL-002-2 (Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event). The North American Electric Reliability Corporation (NERC), the Commission-certified Electric Reliability Organization (ERO), developed and submitted Reliability Standard BAL-002-2 for Commission approval. Reliability Standard BAL-002-2 is intended to ensure that balancing authorities and reserve sharing groups are able to recover from system contingencies by deploying adequate reserves to return their Area Control Error (ACE) to defined values and by replacing the capacity and energy lost due to generation or

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<sup>1</sup> 16 U.S.C. 824(o).

transmission equipment outages.<sup>2</sup> In addition, the Commission approves eight new and revised definitions proposed by NERC for inclusion in the NERC Glossary and the retirement of currently-effective Reliability Standard BAL-002-1 immediately prior to the effective date of Reliability Standard BAL-002-2. The Commission also approves, with one modification, Reliability Standard BAL-002-2's associated violation risk factors and violation severity levels, and implementation plan.

2. Pursuant to section 215(d)(5) of the FPA,<sup>3</sup> the Commission directs NERC to develop modifications to Reliability Standard BAL-002-2, Requirement R1 to address concerns related to the potential reliability impact of repeated extensions of the period for ACE recovery. To address the concerns, the Notice of Proposed Rulemaking (NOPR) proposed directing that NERC modify the Reliability Standard to require reliability coordinator approval of extensions of the ACE recovery period. Numerous commenters opposed the proposal, arguing that the proposal has the potential to complicate an already challenging situation. Thus, to address the underlying concern while cognizant of the NOPR comments, the final rule adopts a different approach of directing NERC to develop modifications to Reliability Standard BAL-002-2 that would require an entity to

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<sup>2</sup> ACE is the instantaneous difference between a balancing authority's Net Actual and Scheduled Interchange, taking into account the effects of Frequency Bias, correction for meter error, and Automatic Time Error Correction (ATEC), if operating in ATEC mode. ATEC is only applicable to balancing authorities in the Western Interconnection. NERC Glossary of Terms Used in NERC Reliability Standards (NERC Glossary) at 7 (updated September 29, 2016).

<sup>3</sup> 16 U.S.C. 824o(d)(5).

provide certain information to the reliability coordinator when the entity does not timely recover ACE due to an intervening disturbance. As discussed below, the Commission also directs NERC: (1) to collect and report on data related to resets of the contingency reserve restoration period; and (2) to study and report on the reliability risks associated with megawatt losses above an applicable entity's most severe single contingency (MSSC) that do not cause energy emergencies.

**I. Background**

3. Section 215 of the FPA requires a Commission-certified ERO to develop mandatory and enforceable Reliability Standards that are subject to Commission review and approval. The Commission may approve, by rule or order, a proposed Reliability Standard or modification to a Reliability Standard if it determines that the Reliability Standard is just, reasonable, not unduly discriminatory or preferential and in the public interest.<sup>4</sup> Once approved, the Reliability Standards may be enforced by NERC, subject to Commission oversight, or by the Commission independently.<sup>5</sup> Pursuant to section 215 of

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<sup>4</sup> *Id.* 824o(d)(2).

<sup>5</sup> *Id.* 824o(e).

the FPA, the Commission established a process to select and certify an ERO,<sup>6</sup> and subsequently certified NERC.<sup>7</sup>

4. On March 16, 2007, the Commission issued Order No. 693, approving 83 of the 107 Reliability Standards filed by NERC, including Reliability Standard BAL-002-0.<sup>8</sup> In addition, pursuant to section 215(d)(5) of the FPA, the Commission directed the ERO to develop modifications to Reliability Standard BAL-002-0: (1) to include a requirement that explicitly provides that demand side management may be used as a resource for contingency reserves; (2) to develop a continent-wide contingency reserve policy; and (3) to refer to the ERO rather than the NERC Operating Committee in Requirements R4.2 and R6.2.<sup>9</sup> On January 10, 2011, the Commission approved Reliability Standard BAL-002-1, which addressed the third directive described above.<sup>10</sup>

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<sup>6</sup> *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, FERC Stats. & Regs. ¶ 31,204, *order on reh'g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006).

<sup>7</sup> *North American Electric Reliability Corp.*, 116 FERC ¶ 61,062, *order on reh'g and compliance*, 117 FERC ¶ 61,126 (2006), *aff'd sub nom. Alcoa, Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009).

<sup>8</sup> *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs. ¶ 31,242, *order on reh'g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

<sup>9</sup> Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 356.

<sup>10</sup> *North American Electric Reliability Corp.*, 134 FERC ¶ 61,015 (2011).

## II. NERC Petition and Reliability Standard BAL-002-2

5. On January 29, 2016, NERC filed a petition seeking approval of Reliability Standard BAL-002-2;<sup>11</sup> eight new or revised definitions to be added to the NERC Glossary; and Reliability Standard BAL-002-2's associated violation risk factors and violation severity levels, effective date, and implementation plan.<sup>12</sup> NERC stated that Reliability Standard BAL-002-2 is just, reasonable, not unduly discriminatory or preferential, and in the public interest because it satisfies the factors set forth in Order No. 672, which the Commission applies when reviewing a proposed Reliability Standard.<sup>13</sup> NERC also asserted that Reliability Standard BAL-002-2 addresses the outstanding directives from Order No. 693 regarding the use of demand side management as a resource for contingency reserve and the development of a continent-wide contingency reserve policy.

6. Reliability Standard BAL-002-2 consolidates six requirements in currently-effective Reliability Standard BAL-002-1 into three requirements and is applicable to

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<sup>11</sup> Reliability Standard BAL-002-2 is available on the Commission's eLibrary document retrieval system in Docket No. RM16-7-000 and on the NERC website, [www.nerc.com](http://www.nerc.com).

<sup>12</sup> The eight proposed new and revised definitions for inclusion in the NERC Glossary are for the following terms: Balancing Contingency Event, Most Severe Single Contingency, Reportable Balancing Contingency Event, Contingency Event Recovery Period, Contingency Reserve Restoration Period, Pre-Reporting Contingency Event ACE Value, Reserve Sharing Group Reporting ACE, and Contingency Reserve. NERC Petition at 28-34.

<sup>13</sup> NERC Petition at 13 and Ex. F (Order No. 672 Criteria).

balancing authorities and reserve sharing groups. NERC stated that Reliability Standard BAL-002-2 improves upon existing Reliability Standard BAL-002-1 because “it clarifies obligations associated with achieving the objective of BAL-002 by streamlining and organizing the responsibilities required therein, enhancing the obligation to maintain reserves, and further defining events that predicate action under the standard.”<sup>14</sup> NERC also stated that Reliability Standard BAL-002-2 “address[es] and supersede[s]” the proposed interpretation previously submitted by NERC (i.e., of Reliability Standard BAL-002-1a) and pending in Docket No. RM13-6-000.<sup>15</sup>

7. Requirement R1 of BAL-002-2 requires a balancing authority or reserve sharing group experiencing a Reportable Balancing Contingency Event to deploy its contingency reserves to recover its ACE to certain prescribed values within the Contingency Event

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<sup>14</sup> *Id.* at 13.

<sup>15</sup> *Id.* at 1. On February 12, 2013, NERC filed a proposed interpretation of Reliability Standard BAL-002-1 that construed the Reliability Standard so that the 15-minute ACE recovery period would not apply to events of a magnitude exceeding an entity’s most severe single contingency. In a NOPR issued on May 16, 2013, the Commission proposed to remand the proposed interpretation on procedural grounds. *Electric Reliability Organization Interpretation of Specific Requirements of the Disturbance Control Performance Standard*, 143 FERC ¶ 61,138 (2013). The rulemaking on the proposed interpretation is pending. In the petition in the immediate proceeding, NERC states that, upon approval of Reliability Standard BAL-002-2, NERC will file a notice of withdrawal of the proposed interpretation. NERC Petition at 1.



Recovery Period of 15 minutes.<sup>16</sup> However, under certain circumstances, Reliability Standard BAL-002-2 relieves responsible entities from strict compliance with the existing time periods for ACE recovery and contingency reserve restoration “to ensure responsible entities retain flexibility to maintain service to Demand, while managing reliability, and to avoid duplication with other Reliability Standards.”<sup>17</sup>

8. Specifically, Requirement R1, Part 1.3.1 provides that a balancing authority or reserve sharing group is not subject to Requirement R1, Part 1.1 if it: (1) is experiencing a Reliability Coordinator declared Energy Emergency Alert Level; (2) is utilizing its contingency reserve to mitigate an operating emergency in accordance with its emergency Operating Plan, and (3) has depleted its contingency reserve to a level below its most severe single contingency.

9. In addition, under Requirement R1, Part 1.3.2, a balancing authority or reserve sharing group is not subject to Requirement R1, Part 1.1 if the balancing authority or

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<sup>16</sup> NERC proposes to define Reportable Balancing Contingency Event as: “Any Balancing Contingency Event occurring within a one-minute interval of an initial sudden decline in ACE based on EMS scan rate data that results in a loss of MW output less than or equal to the Most Severe Single Contingency, and greater than or equal to the lesser amount of: (i) 80% of the Most Severe Single Contingency, or (ii) the amount listed below for the applicable Interconnection. Prior to any given calendar quarter, the 80% threshold may be reduced by the responsible entity upon written notification to the Regional Entity.” NERC Petition at 30. Contingency Event Recovery Period, as proposed by NERC, means: “A period that begins at the time that the resource output begins to decline within the first one-minute interval of a Reportable Balancing Contingency Event, and extends for fifteen minutes thereafter.” *Id.* at 32.

<sup>17</sup> *Id.* at 4.

reserve sharing group experiences: (1) multiple Contingencies where the combined megawatt (MW) loss exceeds its most severe single contingency and that are defined as a single Balancing Contingency Event or (2) multiple Balancing Contingency Events within the sum of the time periods defined by the Contingency Event Recovery Period and Contingency Reserve Restoration Period whose combined magnitude exceeds the Responsible Entity's most severe single contingency.

10. Requirement R2 provides that each responsible entity:

shall develop, review and maintain annually, and implement an Operating Process as part of its Operating Plan to determine its Most Severe Single Contingency and to make preparations to have Contingency Reserve equal to, or greater than the Responsible Entity's Most Severe Single Contingency available for maintaining system reliability.

NERC explained that Requirement R2 requires responsible entities to demonstrate that their process for calculating their most severe single contingency “surveys all contingencies, including single points of failure, to identify the event that would cause the greatest loss of resource output used by the [reserve sharing group or balancing authority] to meet Firm Demand.”<sup>18</sup> NERC further stated that Requirement R2 supports Requirements R1 and R3 in Reliability Standard BAL-002-2 “as these requirements rely on proper calculation of [most severe single contingency].”<sup>19</sup>

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<sup>18</sup> *Id.* at 25.

<sup>19</sup> *Id.* NERC provides examples of how responsible entities may calculate the most severe single contingency in the petition. *See* NERC Petition, Ex. B (Calculating Most Severe Single Contingency).

11. Requirement R3 provides that “each Responsible Entity, following a Reportable Balancing Contingency Event, shall restore its Contingency Reserve to at least its Most Severe Single Contingency, before the end of the Contingency Reserve Restoration Period [90 minutes], but any Balancing Contingency Event that occurs before the end of a Contingency Reserve Restoration Period resets the beginning of the Contingency Event Recovery Period.”

12. NERC explained that the revised language in the consolidated requirements in Reliability Standard BAL-002-2 will improve efficiency and clarity by removing “unnecessary entities from compliance to capture only those entities that are vital for reliability.”<sup>20</sup> NERC stated that the new definitions for Balancing Contingency Event and Reportable Balancing Contingency Event more clearly identify the types of events that cause frequency deviations necessitating action under Reliability Standard BAL-002-2 and provide additional detail regarding the types of resources that may be identified as contingency reserves. Furthermore, NERC stated that Reliability Standard BAL-002-2 “ensures objectivity of the reserve measurement process by guaranteeing a Commission-sanctioned continent-wide reserve policy,” and therefore satisfies an outstanding Order No. 693 directive for uniform elements, definitions and requirements for a continent-wide contingency reserve policy.<sup>21</sup> Finally, NERC asserted that the revised definition of

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<sup>20</sup> NERC Petition at 14.

<sup>21</sup> *Id.*

Contingency Reserves “improves the existing definition by addressing a Commission directive in Order No. 693 to allow demand side management to be used as a resource for contingency reserve when necessary.”<sup>22</sup>

13. NERC submitted proposed violation risk factors and violation severity levels for each requirement of Reliability Standard BAL-002-2 and an implementation plan and effective dates. NERC stated that these proposals were developed and reviewed for consistency with NERC and Commission guidelines. NERC proposed an effective date for Reliability Standard BAL-002-2 that is the first day of the first calendar quarter that is six months after the date of Commission approval. NERC explained that this implementation date will allow entities to make necessary modifications to existing software programs to ensure compliance.<sup>23</sup>

14. On February 12, 2016, NERC submitted a supplemental filing to clarify a statement in the petition that Reliability Standard BAL-002-2 would operate in conjunction with Reliability Standard TOP-007-0 to control system frequency by addressing transmission line loading in the event of a transmission overload. NERC explained that, while Reliability Standard TOP-007-0 will be retired on April 1, 2017, “the obligations related to [transmission line loading] under TOP-007-0 will be covered by Commission-approved TOP-001-3, EOP-003-2, IRO-009-2, and IRO-008-2 . . . by

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<sup>22</sup> *Id.* at 33.

<sup>23</sup> NERC Petition, Ex. D (Implementation Plan) at 3.

requiring relevant functional entities to communicate [Interconnection Reliability Operating Limits (IROL)] and [System Operating Limits (SOL)] exceedances so that the [reliability coordinator] can direct appropriate corrective action to mitigate or prevent those events.”<sup>24</sup>

15. On March 31, 2016, NERC submitted a second supplemental filing to “further clarify the extent to which BAL-002-2 interacts with other Commission-approved Reliability Standards to promote Bulk Power System reliability...[and support] the overarching policy objective reflected in the stated purpose of Reliability Standard BAL-002-2.”<sup>25</sup> In its filing, NERC expanded upon the explanation in the petition regarding how an “integrated” and “coordinated suite of Reliability Standards” (BAL-001-2, BAL-003-1, TOP-007-0, EOP-002-3, EOP-011-1, IRO-008-2, and IRO-009-2) will apply to events causing MW losses above a responsible entity’s most severe single contingency, and how those other Reliability Standards are better designed to manage the greater risks created by such events.<sup>26</sup>

### **III. Notice of Proposed Rulemaking**

16. On May 19, 2016, the Commission issued a NOPR proposing to approve Reliability Standard BAL-002-2 as just, reasonable, not unduly discriminatory or

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<sup>24</sup> NERC February 12, 2016 Supplemental Filing at 2-3.

<sup>25</sup> NERC March 31, 2016 Supplemental Filing at 1, 5.

<sup>26</sup> *Id.* at 2-5.

preferential and in the public interest.<sup>27</sup> The Commission also proposed to approve NERC's eight proposed new and revised definitions and the retirement of currently-effective Reliability Standard BAL-002-1. Further, the Commission proposed to direct NERC to change the proposed violation risk factor from "medium" to "high" for Reliability Standard BAL-002-2, Requirements R1 and R2.

17. In the NOPR, the Commission recognized that it is essential for grid reliability that responsible entities balance resources and demand and restore system frequency to recover from a system event, and that they maintain reserves necessary to replace capacity and energy lost due to generation or transmission outages. The Commission also stated that Reliability Standard BAL-002-2 improves upon currently-effective Reliability Standard BAL-002-1 by consolidating requirements to streamline and clarify the obligations related to achieving these goals. However, the Commission raised concerns regarding possible extensions of the 15-minute ACE recovery period and the 90-minute Contingency Reserve Restoration Period, as well as NERC's proposal to limit the scope of Reliability Standard BAL-002-2 to a responsible entity's most severe single contingency.

18. In the NOPR, the Commission sought comment on the following issues:

(1) reliability coordinator authorization of extensions of the 15-minute ACE recovery period; (2) resets or credits during the 90-minute Contingency Reserve Restoration

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<sup>27</sup> *Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event Reliability Standard*, Notice of Proposed Rulemaking, 81 FR 33,441 (May 26, 2016), 155 FERC ¶ 61,180 (2016) (NOPR).

Period; (3) the exclusion of megawatt losses above the most severe single contingency in the proposed definition of Reportable Balancing Contingency Event; and (4) NERC's proposal to reduce from "high" to "medium" the violation risk factor for proposed Requirements R1 and R2. The Commission also sought comment on whether NERC's proposed definition of contingency reserve should include the NERC-defined term Demand-side Management.

19. In response to the NOPR, the Commission received 11 sets of comments. We address below the issues raised in the NOPR and comments. The Appendix to this final rule lists the entities that filed comments in response to the NOPR.

#### **IV. Discussion**

20. Pursuant to FPA section 215(d)(2), we approve Reliability Standard BAL-002-2 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. We also approve NERC's eight new and revised proposed definitions and, with one exception, the proposed violation risk factor and violation severity level assignments. In addition, we approve NERC's implementation plan establishing an effective date of the first day of the first calendar quarter, six months after the date of Commission approval, and the retirement of currently-effective BAL-002-1 immediately before that date.<sup>28</sup>

21. The purpose of Reliability Standard BAL-002-2 is to ensure that balancing authorities and reserve sharing groups balance resources and demand and return their

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<sup>28</sup> NERC Petition, Ex. D (Implementation Plan) at 3.

ACE to defined values following a Reportable Balancing Contingency Event. We determine that Reliability Standard BAL-002-2 improves upon currently-effective Reliability Standard BAL-002-1 by consolidating the number of requirements to streamline and clarify the obligations for responsible entities to deploy contingency reserves to stabilize system frequency in response to system contingencies.

22. We conclude that BAL-002-2 satisfies the Order No. 693 directive that NERC develop a continent-wide contingency reserve policy.<sup>29</sup> Also, we accept NERC's explanation in response to the NOPR that demand side resources that are technically capable can be included as contingency reserves, and therefore determine that Reliability Standard BAL-002-2 satisfies the Order No. 693 directive that demand side management may be used as a resource for contingency reserves.<sup>30</sup>

23. In addition, pursuant to section 215(d)(5) of the FPA, we direct NERC to develop modifications to Reliability Standard BAL-002-2 to address our concerns, discussed below, regarding the 15-minute ACE recovery period set forth in Requirement R1. We also direct NERC to collect and report on data pertaining to the occurrence of Balancing Contingency Events that trigger resets of the 90-minute Contingency Reserve Restoration

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<sup>29</sup> Order No. 693, FERC Stats. & Regs ¶ 31,242 at PP 340, 341 and 356.

<sup>30</sup> Order No. 693, FERC Stats. & Regs. ¶ 31,242 at PP 330, 335 and 356. In its comments NERC explained that “[t]he proposed definition balances the need for flexibility to include a variety of demand side resources in measurements of Contingency Reserve with the need to define the types of demand side resources that are ‘technically capable’ to serve as contingency reserve.” NERC Comments at 30.



Period under Requirement R3. We further direct NERC to study and submit a report to the Commission with findings regarding reliability risks associated with most severe single contingency exceedances that do not result in energy emergencies.

24. We discuss below the following issues raised in the NOPR and addressed in the comments: (A) whether a reliability coordinator must expressly authorize extensions of the 15-minute ACE recovery period; (B) whether BAL-002-2 should be modified to require all contingency reserves to be restored within the 90-minute Contingency Reserve Restoration Period; (C) whether a reasonable obligation should be imposed for balancing authorities and reserve sharing groups to address scenarios involving megawatt losses above the most severe single contingency that do not cause energy emergencies; and (D) NERC's proposal to reduce from "high" to "medium" the violation risk factor for Requirements R1 and R2.

**A. The 15-Minute ACE Recovery Period**

**NERC Petition**

25. In its petition, NERC stated that the "exemption" from the 15-minute ACE recovery period in Requirement R1, Part 1.3.1 "eliminates the existing conflict with EOP-011-1, as it removes undefined auditor discretion when assessing compliance and allows the responsible entity flexibility to maintain service to load while managing reliability."<sup>31</sup> NERC explained that this exemption does not eliminate an entity's

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<sup>31</sup> NERC Petition at 22.

obligation to respond to a Reportable Balancing Contingency Event, but rather it will “simply allow more time to return the Reporting ACE to the defined limits than would otherwise be allowed.”<sup>32</sup>

### **NOPR**

26. In the NOPR, the Commission noted that Reliability Standard BAL-002-2, Requirement R1 obligates a responsible entity that experiences a Reportable Balancing Contingency Event to return its Reporting ACE to pre-defined values within the 15-minute Contingency Event Recovery Period. Further, the Reliability Standard does not expressly provide a definitive and enforceable deadline for ACE recovery during a reliability coordinator-declared Energy Emergency Alert accompanied by the depletion of the entity’s contingency reserves to below its most severe single contingency.

27. The Commission stated that NERC’s explanation for relief from the 15-minute ACE recovery period in Reliability Standard BAL-002-2 raises concerns, because it is unclear how or when an entity will prepare for a second contingency during the indeterminate extension of the 15-minute ACE recovery period that Requirement R1, Part 1.3 permits. The Commission observed that a balancing authority that is operating out-of-balance for an extended period of time is “leaning on the system” by relying on external resources to meet its obligations. That could affect other entities within an Interconnection, particularly if another entity is reacting to a grid event while unaware

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<sup>32</sup> *Id.* at 24.

that the first entity has not restored its ACE.<sup>33</sup> While an extension of the 15-minute ACE recovery period may be appropriate under certain emergency conditions, the NOPR explained that, with a wide-area view and superior information and objectivity, the reliability coordinator is in a better position to decide whether to extend the ACE recovery period after an entity has met the criteria described in Requirement R1, Part 1.3.1.

28. Further, while Reliability Standard EOP-011-1, Requirement R3, requires the reliability coordinator to review balancing authority Operating Plans and notify a balancing authority of any “reliability risks” the reliability coordinator may identify with a time frame for the resubmittal of revised Operating Plans, the NOPR explained that the Reliability Standard does not require reliability coordinator approval of Operating Plans.

29. Therefore, the NOPR proposed to direct NERC to develop modifications to Reliability Standard BAL-002-2 that would require Reporting ACE recovery within the 15-minute Contingency Event Recovery Period unless the relevant reliability coordinator expressly authorizes an extension of the 15-minute ACE recovery period after the balancing authority has met the criteria described in Requirement R1, Part 1.3.1. The Commission’s proposal included modifying Reliability Standard BAL-002-2 to identify the reliability coordinator as an Applicable Entity.

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<sup>33</sup> NOPR, 155 FERC ¶ 61,180 at P 22.

### Comments

30. NERC, EEI, NRECA, TVA, CEA, Joint Commenters, IESO and APS oppose the proposed directive. NERC asserts that the proposed directive is unnecessary because the Balancing Authority ACE Limit (BAAL) and a balancing authority's resource obligations under Reliability Standard BAL-001-2 discourage balancing authorities from leaning on the system during extensions of the Contingency Event Recovery Period. NERC explains that the BAAL:

is a unique limit on a [balancing authority's] Reporting ACE based on Real-time interconnection frequency levels ... since the loss of a resource would influence the Interconnection's frequency, the BAAL would adjust (or 'tighten') to assure that the Interconnection frequency remains in a safe range. The [balancing authority] must return its operations to within the 'tightened' BAAL within 30 minutes and thus would not be able to 'lean' on the Interconnection for any prolonged period.<sup>34</sup>

31. Further, NERC contends that the proposed role for reliability coordinators is unnecessary—in both emergency and non-emergency situations—because the reliability coordinator “must maintain constant oversight of reliability within its [reliability coordinator] area and direct other responsible entities to take actions necessary to maintain reliability.”<sup>35</sup>

32. EEI and Joint Commenters assert that the NOPR proposal “would result in unnecessary duplication of requirements adding no tangible benefit to reliability while

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<sup>34</sup> NERC Comments at 10.

<sup>35</sup> *Id.* at 11 (citing Reliability Standards EOP-0011-1, EOP-003-2, IRO-001-4, IRO-002-4, IRO-008-2, and IRO-009-2).

needlessly increasing the compliance burden.”<sup>36</sup> Joint Commenters also note the infrequent nature of multiple-contingency events and Energy Emergency Alerts (EEAs), describing them as “exceptional circumstances appropriate for an exemption from the typical measured requirements.”<sup>37</sup> Joint Commenters state that in 2015 there were ten EEA Level 2 and Level 3 events, and that “most [balancing authorities] experience no EEA events in a given year ... allowing recovery exceptions during these exceptional circumstances would not create significant risk with respect to ACE recovery responsibilities.”<sup>38</sup> Joint Commenters also contend that in a “multiple-contingency event or during an EEA, there are likely scores of activities occupying the [reliability coordinator’s] attention. Requiring the [balancing authority] and [reliability coordinator] to conduct a conference call during an EEA to discuss the merits of requests for additional ACE recovery time only complicates these already-challenging conditions.”<sup>39</sup>

33. While supporting the notification and involvement of reliability coordinators, APS shares Joint Commenters’ concern that requiring reliability coordinators to expressly authorize extensions of the 15-minute ACE recovery period could distract responsible entities from focusing on “maintaining and recovering the reliability of the [bulk electric

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<sup>36</sup> EEI Comments at 7; *see also* Joint Commenters Comments at 2-4.

<sup>37</sup> Joint Commenters Comments at 4.

<sup>38</sup> *Id.* (citing NERC’s 2016 State of Reliability Report at 38).

<sup>39</sup> *Id.* at 3.

system].”<sup>40</sup> Therefore, as an alternative to the NOPR proposal, APS proposes that balancing authorities obtain extensions of the 15-minute ACE recovery period under the extenuating circumstances described in Requirement R1, Part 1.3.1 by notifying the reliability coordinator of the conditions within its area and providing the reliability coordinator with an ACE recovery plan and target time period, but without obtaining express approval from the reliability coordinator.<sup>41</sup>

34. Idaho Power and BPA support the Commission’s proposal to expressly require reliability coordinator authorization for extensions of the 15-minute Reporting ACE recovery period. Idaho power agrees with “shifting more oversight to the Reliability Coordinator” as the entity with the system-wide view.<sup>42</sup>

#### **Commission Determination**

35. We are persuaded by the commenters not to adopt the NOPR proposal that would require reliability coordinator authorization to extend the 15-minute ACE recovery period. As commenters explain, seeking the proposed reliability coordinator authorization while recovering from a disturbance has the potential to complicate an already-challenging situation. However, we continue to see a need to address the underlying concern expressed in the NOPR that a balancing authority that is operating

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<sup>40</sup> APS Comments at 4-5.

<sup>41</sup> *Id.* at 5.

<sup>42</sup> Idaho Power Comments at 2; *see also* BPA Comments at 3.

out-of-balance for an extended period of time is “leaning on the system” by relying on external resources to meet its obligations. That scenario could affect other entities within an Interconnection, particularly if another entity is reacting to a grid event while unaware that the first entity has not restored its ACE. Accordingly, to address our concern without requiring reliability coordinator authorization, we adopt APS’s proposed alternative that would require a balancing authority or reserve sharing group experiencing a depletion of contingency reserves below its most severe single contingency level during an Energy Emergency Alert to obtain an extension of the 15-minute ACE recovery period by informing the reliability coordinator of the circumstances and providing it with an ACE recovery plan and target time period.

36. We are persuaded that APS’s approach is reasonable and adequately addresses concerns with extensions of the 15-minute ACE recovery period. By requiring notification of reliability coordinators and providing the reliability coordinator with an ACE recovery plan and target time period, we agree that the APS proposal “would allow appropriate flexibility to [balancing authorities] when extenuating circumstances are present while providing [reliability coordinators] with the necessary data, communication, and coordination to fulfill their oversight responsibilities to the Interconnection.”<sup>43</sup>

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<sup>43</sup> APS Comments at 8.

37. Accordingly, we direct NERC to develop modifications to Reliability Standard BAL-002-2, Requirement R1 to require balancing authorities or reserve sharing groups: (1) to notify the reliability coordinator of the conditions set forth in Requirement R1, Part 1.3.1 preventing it from complying with the 15-minute ACE recovery period; and (2) to provide the reliability coordinator with its ACE recovery plan, including a target recovery time. NERC may also propose an equally efficient and effective alternative.

**B. The 90-Minute Contingency Reserve Restoration Period**

**NERC Petition**

38. Reliability Standard BAL-002-2, Requirement R3 requires a balancing authority or reserve sharing group to restore its contingency reserves to at least its most severe single contingency before the end of the 90-minute Contingency Reserve Restoration Period.<sup>44</sup> Requirement R3 also provides for an automatic “reset” of the 90-minute restoration period based upon any Balancing Contingency Event that occurs during the restoration period.<sup>45</sup>

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<sup>44</sup> NERC Petition, Ex. D (Implementation Plan). The 90-minute contingency reserve restoration period begins after the end of the 15-minute ACE restoration period under Requirement R1. Accordingly, responsible entities must restore contingency reserves within 105 minutes of the occurrence of a Reportable Balancing Contingency Event to comply with Requirement R3.

<sup>45</sup> Balancing Contingency Event means: “Any single event described in Subsections (A), (B), or (C) below, or any series of such otherwise single events, with each separated from the next by one minute or less.

(continued...)



**NOPR**

39. In the NOPR, the Commission proposed to direct NERC to modify Reliability Standard BAL-002-2 to “eliminate the potential for unlimited resets and ensure that contingency reserves must be restored within the 90-minute Contingency Reserve Restoration Period.”<sup>46</sup> The Commission sought comment on a possible alternative that would give a balancing authority or reserve sharing group “credits” for megawatt losses resulting from Balancing Contingency Events during the 90-minute restoration period, and allow an additional 90 minutes to restore reserves related to those megawatt losses.<sup>47</sup>

**Comments**

40. NERC, EEI, NRECA, CEA, Joint Commenters, IESO and APS support approval of Requirement R3 as filed. NERC asserts that, because of resource limitations and the

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A. Sudden loss of generation:

a. Due to

i. unit tripping,

ii. loss of generator Facility resulting in isolation of the generator from the Bulk Electric System or from the responsible entity’s System, or

iii. sudden unplanned outage of transmission Facility;

b. And, that causes an unexpected change to the responsible entity’s ACE;

B. Sudden loss of an import, due to unplanned outage of transmission equipment that causes an unexpected imbalance between generation and Demand on the Interconnection.

C. Sudden restoration of a Demand that was used as a resource that causes an unexpected change to the responsible entity’s ACE.” NERC Petition Ex. D.

<sup>46</sup> NOPR, 155 FERC ¶ 61,180 at P 29.

<sup>47</sup> *Id.* PP 27-29.

potential compliance exposure to other Reliability Standards, including the Reporting ACE recovery requirements in Reliability Standard BAL-001-2, entities will not experience unlimited resets of the 90-minute restoration period.<sup>48</sup> NERC explains that “[i]f an entity continues to trip units before full recovery of other units, the responsible entity would eventually fail to meet obligations under other Reliability Standards (including the requirement to recover ACE within 15 minutes under proposed BAL-002-2) and may eventually enter into an Emergency situation under [reliability coordinator] oversight...”<sup>49</sup> NERC states that balancing authorities and reserve sharing groups would still be required to actively restore contingency reserves even after experiencing a Balancing Contingency Event during the 90-minute restoration period. Such events, according to NERC, “would merely extend the Contingency Reserve Restoration Period to ensure that the responsible entity has adequate time to recover from consecutive losses.”<sup>50</sup> NERC asserts that the Commission’s proposed credit approach “would be confusing and burdensome, and it may attract attention away from full and final restoration of the Contingency Reserve.”<sup>51</sup> EEI agrees, adding that, “in light of existing

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<sup>48</sup> NERC Comments at 17-18.

<sup>49</sup> *Id.* at 17.

<sup>50</sup> *Id.* at 16.

<sup>51</sup> *Id.* at 18-19.

standards, this concern does not pose a sufficient risk to system reliability to merit NERC developing modifications to the standard.”<sup>52</sup>

41. IESO and CEA claim that modifications to Reliability Standard BAL-002-2, Requirement R1 to eliminate the potential for unlimited resets are unnecessary. IESO questions the concern about unlimited resets of the Contingency Reserve Restoration Period, stating that it “would suggest that multiple resource loss events could somehow benefit or unburden a [balancing authority’s] obligation to restore the reserve level ... [rather] the infrequent event of a reset occurrence is more appropriately viewed as simply not applying double jeopardy to a [balancing authority] that is already in a troubled situation.”<sup>53</sup> IESO further states that a reset of the contingency reserve restoration period “will simply provide the opportunity for the involved balancing authority to reassess the situation and act accordingly to replenish the contingency reserve” to comply with BAL-002-2.<sup>54</sup> Both IESO and CEA assert that balancing authorities “have a strong track record of acting in good faith.”<sup>55</sup> CEA also notes that “since a [balancing authority] does

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<sup>52</sup> EEI Comments at 8.

<sup>53</sup> IESO Comments at 4-5.

<sup>54</sup> *Id.* at 5; *see also* CEA Comments at 5.

<sup>55</sup> CEA Comments at 5; *see also* IESO Comments at 5.

not own any resources, it cannot trigger or otherwise intentionally cause an additional loss of resource during the 90-minute period in order to reset the recovery period.”<sup>56</sup>

42. Joint Commenters also oppose the Commission’s proposal, explaining that “following a unit trip that results in a [Balancing Contingency Event], the generator’s telemetry is often invalid or suspect for some time, and if the [balancing authority] is unable to accurately quantify the actual MW loss, it may be required to take extreme actions, including shedding firm load, simply to meet the 90-minute contingency recovery requirement.”<sup>57</sup> Joint Commenters claim that the “likelihood of such an occurrence of multiple independent generation losses absent a catastrophic transmission failure is also very low.”<sup>58</sup> Joint Commenters state that on average, one generator is lost in the Eastern Interconnection every 7 to 8 days, and “the probability of four random large generator trips in the Eastern Interconnection in a two hour period was one in 350 years.”<sup>59</sup>

43. BPA and Idaho Power support the Commission’s proposal to require balancing authorities to restore contingency reserves within the 90-minute Contingency Event

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<sup>56</sup> CEA Comments at 4; *see also* IESO Comments at 5.

<sup>57</sup> Joint Commenters Comments at 5.

<sup>58</sup> *Id.*

<sup>59</sup> Joint Commenters Comments at 6 (citing a probability analysis performed during the Reliability Standard BAL-003-1 development process using frequency event data for January 2006 to September 2012).

Recovery Period and receive “credits” for megawatt losses during the Contingency Event Recovery Period. TVA believes the potential for unlimited resets of the 90-minute restoration period is “extremely remote,” but TVA supports the credit proposal as a “reasonable approach” for managing multiple events during a contingency restoration period.

### **Commission Determination**

44. The Commission determines not to adopt the NOPR proposal that NERC modify Reliability Standard BAL-002-2 to establish a firm requirement that responsible entities must restore contingency reserves within the 90-minute Contingency Reserve Restoration Period. Based on the comments, we are satisfied that occurrences of multiple Balancing Contingency Events during the 90-minute restoration period are rare and would be temporally bounded by the Reporting ACE recovery requirements in Reliability Standard BAL-001-2. We also acknowledge NERC’s comment that intervening Balancing Contingency Events do not relieve balancing authorities and reserve sharing groups of their obligation to restore contingency reserves by the end of the reset period. Further, we acknowledge Joint Commenters’ concern that determining the amount of megawatt losses to “credit” could be a distraction from the contingency reserve restoration effort, and the benefits from the proposed “credit” approach could be offset by unnecessary load shedding caused by potential confusion and uncertainties associated with its implementation.

45. While, as stated in the NOPR, under some circumstances, extensions of the 90-minute Contingency Reserve Restoration Period may be appropriate, the comments do

not fully address the concern expressed in the NOPR with resets resulting from additional megawatt losses following a Reportable Balancing Contingency Event. Therefore, although we determine not to direct modifications to the Reliability Standard, we conclude that the automatic reset provision of Reliability Standard BAL-002-2, Requirement R3 should be monitored for potential problems.

46. Accordingly, the Commission directs NERC to collect and report data pertaining to: (1) additional megawatt losses following Reportable Balancing Contingency Events during the Contingency Reserve Restoration Period; and (2) the time periods for contingency reserve restoration under Requirement R3 and the number of resets of the 90-minute restoration period, and submit a report to the Commission two years following the first day of implementation of Requirement R3. After NERC reports on the data in a compliance filing, the Commission will consider what further action, if any, to take.

**C. Exclusion of Megawatt Losses Above the Most Severe Single Contingency**

**NERC Petition**

47. NERC's definition of Reportable Balancing Contingency Event limits balancing authority and reserve sharing group responsibility to megawatt losses between 80 percent and 100 percent of their most severe single contingency that occur within a one minute interval.<sup>60</sup> In its petition, NERC asserted that an "integrated and coordinated" suite of set of Reliability Standards (BAL-001-2, BAL-003-1, TOP-007-0, EOP-002-3, EOP-011-1,

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<sup>60</sup> See NERC Petition, Ex. D (Implementation Plan) at 2.

IRO-008-2, and IRO-009-2) will address the “complex issues” resulting from exceedances of the most severe single contingency.<sup>61</sup>

### **NOPR**

48. In the NOPR, the Commission expressed concern about the exclusion of megawatt losses above a responsible entity’s most severe single contingency from the scope of Reliability Standard BAL-002-2. The Commission questioned the assumption that all such megawatt losses, however small, warrant the proposed limitation on Reliability Standard BAL-002-2.<sup>62</sup> Further, while recognizing the protections that the related set of Reliability Standards may provide in extreme circumstances, the Commission noted that megawatt exceedances of the most severe single contingency that do not cause energy emergencies or otherwise implicate the set of Reliability Standards cited by NERC could result in a reliability gap; they also could create the potential for balancing authorities to lean on the Interconnection by indefinitely relying on neighboring balancing authorities’ resources.<sup>63</sup>

49. In the NOPR, the Commission did not propose a specific approach but, rather, sought comment on how to address this possible reliability gap and whether to impose a reasonable obligation for balancing authorities and reserve sharing groups to address

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<sup>61</sup> NERC Petition at 15.

<sup>62</sup> NOPR, 155 FERC ¶ 61,180 at P 33.

<sup>63</sup> *Id.*

scenarios involving megawatt losses above the most severe single contingency that do not cause energy emergencies. The NOPR stated that, based on the comments, the Commission may direct that NERC develop a new or modified Reliability Standard to address that reliability gap.<sup>64</sup>

### **Comments**

50. NERC, EEI, NRECA, TVA, BPA, CEA, Joint Commenters, IESO, and APS assert that concerns about a possible reliability gap are unfounded and urge the Commission to approve Reliability Standard BAL-002-2 as filed. NERC maintains that the limitation on the scope of Reliability Standard BAL-002-2 will not create a reliability gap and reasserts its view that an integrated, coordinated suite of Reliability Standards “will address important reliability issues and prohibit entities from being able to ‘lean’ on the Interconnection when contingency events cause MW losses greater than an entity’s MSSC.”<sup>65</sup> NERC states that in situations involving megawatt losses above the most severe single contingency, reliability issues associated with ACE recovery and contingency reserve restoration become less important and other reliability issues “such as transmission line-loading issues or frequency deviations” create more immediate reliability threats and warrant priority status.<sup>66</sup>

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<sup>64</sup> *Id.* at 34.

<sup>65</sup> NERC Comments at 20 (citing Reliability Standards BAL-001-2, BAL-003-1, EOP-002-3, EOP-011-1, IRO-001-4, TOP-001-3, IRO-008-2, and IRO-009-2).

<sup>66</sup> *Id.*



51. EEI agrees with NERC, and also notes that exceedances of the most severe single contingency that do not create energy emergencies generally raise commercial, not reliability, issues. Further, EEI asserts that tightening Reliability Standard BAL-002-2 by requiring balancing authorities to address megawatt losses above the most severe single contingency “could have unintended consequences that limit the flexibility of the [reliability coordinators] and [balancing authorities] to work together under the existing suite of standards to address such complex situations...”<sup>67</sup>

52. Joint Commenters consider requiring balancing authorities and reserve sharing groups to address megawatt losses above the most severe single contingency as tantamount to requiring entities to operate to “N-2” or greater conditions. Joint Commenters assert that this would not only be expensive, estimating that doubling current contingency reserves across North America could cost \$150-200 million/year based on average monthly cost of spinning reserves, it could adversely impact reliability. Joint Commenters state that N-2 events typically result from severe transmission events involving weather, major equipment or protection system failures. According to Joint Commenters, “[i]n these situations, transmission security takes priority over maintaining ACE to zero. Excessive generation dispatch by [balancing authorities] could interfere

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<sup>67</sup> EEI Comments at 11-12.

with actions taken simultaneously by Transmission Operators and remote [balancing authorities] to resolve problems on the transmission system.”<sup>68</sup>

53. Joint Commenters explain that the available data reflecting experience with megawatt losses subject to currently-effective Reliability Standard BAL-002-1 indicates that concerns about a reliability gap are overstated. According to Joint Commenters, of the 95 events involving most severe single contingency exceedances from 2012 to 2015, 91 were recovered in less than 15 minutes, and there were no Interconnected Reliability Operating Limit (IROL) exceedances of over 30 minutes in 2015, “which demonstrates that the grid was secure even while zero ACE was not achieved within 15 minutes.”<sup>69</sup>

54. CEA and IESO also oppose requiring balancing authorities or reserve sharing groups to address megawatt losses exceeding the most severe single contingency, which they describe as an “open-ended requirement.”<sup>70</sup> CEA explains that it “can severely affect a [balancing authority’s] ability to suitably plan for potential contingency events. At an increased cost and at the expense of reduced market efficiency (more capacity is put aside for reserve as opposed to bidding into the energy market), a [balancing authority] could, in theory, design and operate to N-2, N-3 or greater events. However, this is simply not feasible.”<sup>71</sup>

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<sup>68</sup> Joint Commenters Comments at 9.

<sup>69</sup> *Id.* at 8 (citing NERC’s 2016 State of Reliability Report).

<sup>70</sup> CEA Comments at 5; IESO Comments at 7.

<sup>71</sup> CEA Comments at 5-6.

### **Commission Determination**

55. The Commission remains concerned with relying on a “coordinated suite of standards,” as NERC maintains, to address reliability issues associated with megawatt losses above the most severe single contingency, considering that these other Reliability Standards do not specifically address restoration of ACE and Contingency Reserves.

Further, the requirements for emergency Operating Plans in Reliability Standard EOP-011-1 do not specify any obligation for a balancing authority, transmission system operator, and/or reliability coordinator to take action to return ACE to zero for all operating conditions.

56. Additionally, Reliability Standards TOP-001-3, EOP-003-2, IRO-008-2, and IRO-009-2 pertain to actions needed to prevent or mitigate SOLs/IROLs caused by transmission line loading and other responsibilities of the transmission system operator and reliability coordinator. These Reliability Standards do not specifically address the balancing authority’s responsibility to recover ACE by balancing load and generation, the purpose of Reliability Standard BAL-002-2.

57. The Commission finds the arguments and historical data provided by commenters to be helpful regarding whether there is a need to expand the requirements of Reliability Standard BAL-002-2 to address most severe single contingency exceedances that do not cause energy emergencies, as contemplated in the NOPR. Nonetheless, we believe the comments do not fully resolve open questions regarding the potential reliability impact of suspending the focus on the balancing of demand and load and ACE recovery—the purpose of Reliability Standard BAL-002-2—in exceedance scenarios.

58. The Commission determines that it is important to better understand the potential impacts of the approach taken in Reliability Standard BAL-002-2 when megawatt losses exceed the most severe single contingency without causing an energy emergency.

Accordingly, we direct NERC to study the reliability risks associated with most severe single contingency exceedances that do not cause energy emergencies and submit a report with findings to the Commission two years from Reliability Standard BAL-002-2 implementation.

**D. Violation Risk Factor for Requirements R1 and R2**

**NERC Petition**

59. NERC proposed a “medium” violation risk factor for each requirement of Reliability Standard BAL-002-2.

**NOPR**

60. In the NOPR, the Commission expressed concern that NERC did not adequately justify lowering the assignment of the violation risk factor for Requirements R1 and R2 and proposed to direct that NERC assign a “high” violation risk factor to Reliability Standard BAL-002-2, Requirements R1 and R2.

61. Requirement R1 requires a balancing authority or reserve sharing group to deploy contingency reserves in response to all Reportable Balancing Contingency Events as the means for recovering Reporting ACE. Requirement R2 requires a balancing authority or reserve sharing group to develop, review and maintain a process within its Operating Plans for determining its most severe single contingency and to prepare to have contingency reserves equal to, or greater than, its most severe single contingency.

Currently-effective Reliability Standard BAL-002-1 assigns a “high” violation risk factor for its Requirements R3 and R3.1, which NERC explained are analogous to proposed Requirements R1 and R2 in Reliability Standard BAL-002-2.<sup>72</sup>

62. In the NOPR, the Commission stated that NERC provided insufficient support for the proposed violation risk factor for Requirements R1 and R2. In justifying the assignment of a “medium” violation risk factor NERC asserted, without explanation, that a “medium” violation risk factor is “consistent with other reliability standards (i.e., BAL-001-2, BAL-003-1).”<sup>73</sup> NERC also contended, without explanation, that Requirement R3 is similar in concept to the current enforceable BAL-001-0.1a standard Requirements R1 and R2, which have an approved medium violation risk factor, and approved reliability standards BAL-001-1 and BAL-003-1.<sup>74</sup> The conclusory statements in NERC’s petition regarding the alleged similarities between Requirements R1 and R2 and other Reliability Standards, the NOPR stated, do not adequately explain the alleged bases for reducing the violation risk factor for Requirements R1 and R2 from the analogous Requirement R3 in the currently-effective Reliability Standard.

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<sup>72</sup> NERC Petition, Ex. I (Mapping Document for BAL-002-2).

<sup>73</sup> NERC Petition, Ex. G (Analysis of Violation Risk Factors and Violation Severity Levels) at 4.

<sup>74</sup> *Id.*

### Comments

63. NERC, EEI and APS oppose raising the violation risk factor for Reliability Standard BAL-002-2 to “high” as proposed in the NOPR. NERC asserts that a failure to perform Requirements R1 and R2 “in real time would produce results consistent with the Commission approved guidelines for a ‘Medium’ [violation risk factor] VRF ... [that is] unlikely to lead to Bulk Electric System instability, separation, or cascading failures.”<sup>75</sup> With regard to Requirement R1, NERC states that Reporting ACE “is not an immediate measure of reliability, and the risk resulting from failure to meet Requirement R1” is not likely to lead to instability, separation or cascading failures, the criteria for a high violation risk factor.<sup>76</sup> Likewise, NERC asserts that a “medium” violation risk factor is appropriate for Requirement R2, because the process responsible entities use for developing and reviewing their most severe single contingency “does not directly contribute to reliability.”<sup>77</sup> EEI agrees, adding that it “also believes the medium VRF is justified because in most instances ACE is more reflective of commercial issues, particularly if frequency remains normal.”<sup>78</sup>

64. APS also disagrees with the NOPR proposal because the Commission “utilizes previous versions of reliability standards as a benchmark for the acceptability of VRFs

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<sup>75</sup> NERC Comments at 28.

<sup>76</sup> *Id.* at 29.

<sup>77</sup> *Id.* at 30.

<sup>78</sup> EEI at 13.

[violation risk factors].”<sup>79</sup> APS states that it is “concerned that the assignment of a VRF based solely on the previous VRF assignments may contravene the current NERC Rules of Procedure and associated processes.”<sup>80</sup> APS recommends that the Commission direct NERC to reevaluate the VRFs for Reliability Standard BAL-002-2 “against existing guidance.”<sup>81</sup>

### **Commission Determination**

65. We adopt the NOPR proposal regarding the violation risk factor for Reliability Standard BAL-002-2, Requirements R1 and R2. According to the Commission-approved criteria, a “high” violation risk factor should be assigned to a Reliability Standard requirement if violating the requirement could “directly cause or contribute to the Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation or cascading failures.” Reliability Standard BAL-002-2, Requirement R1 requires responsible entities to recover Reporting ACE following the occurrence of a Reportable Balancing Contingency Event, which supports Interconnection frequency in real-time.

66. We disagree with NERC that significant real-time differences between actual and scheduled interchange, the imbalance that Requirement R1 is intended to address, do not

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<sup>79</sup> APS Comments at 11.

<sup>80</sup> *Id.*

<sup>81</sup> *Id.*

fall within the scope of the criterion for a “high” violation risk factor. The need for the bulk electric system to stabilize after changes in system frequency is critical for real-time system operations. NERC asserts that the status of Reporting ACE “is not indicative of an immediate vulnerability.”<sup>82</sup> We disagree. A violation of Requirement R1 jeopardizes system frequency, because it places the bulk electric system in a weakened operating condition with heightened risks of instability, separation, or cascading failures that could result from a second contingency.

67. With regard to Requirement R2, NERC acknowledges that actions under Requirement R2 “support Requirement R1 by requiring responsible entities to develop, review, and maintain a process to determine the MSSC and to maintain, for deployment under Requirement R1, at least enough Contingency Reserve to cover the MSSC...[Requirement R2] is critical to the implementation of proposed Reliability Standard BAL-002-2.”<sup>83</sup> Nonetheless, NERC asserts that Requirement R2 “does not directly contribute to reliability.”<sup>84</sup> We disagree, and conclude that the fundamental connection between Requirements R1 and R2 creates a significant role in maintaining reliability.

68. Accordingly, we direct NERC to assign a “high” violation risk factor to Reliability Standard BAL-002-2, Requirements R1 and R2.

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<sup>82</sup> NERC Comments at 29.

<sup>83</sup> *Id.* at 29.

<sup>84</sup> *Id.* at 30.



**V. Information Collection Statement**

69. The Office of Management and Budget (OMB) regulations require that OMB approve certain reporting and recordkeeping (collections of information) imposed by an agency.<sup>85</sup> Upon approval of a collection(s) of information, OMB will assign an OMB control number and expiration date. Respondents subject to the filing requirements of this rule will not be penalized for failing to respond to these collections of information unless the collections of information display a valid OMB control number.

70. The Commission is submitting these reporting and recordkeeping requirements to OMB for its review and approval under section 3507(d) of the Paperwork Reduction Act of 1995, 44 U.S.C. § 3507(d) (2012). The NOPR solicited comments on the Commission's need for this information, whether the information will have practical utility, the accuracy of the provided burden estimate, ways to enhance the quality, utility, and clarity of the information to be collected, and any suggested methods for minimizing the respondent's burden, including the use of automated information techniques. No comments were received.

71. This final rule approves revisions to Reliability Standard BAL-002-1. NERC states in its petition that the Reliability Standard applies to balancing authorities and reserve sharing groups, and is designed to ensure that these entities are able to recover from system contingencies by deploying adequate reserves to return their ACE to defined values and by replacing the capacity and energy lost due to generation or transmission

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<sup>85</sup> 5 CFR 1320.11.

equipment outages. The Commission also approves NERC's seven new definitions and one proposed revised definition, and the retirement of currently-effective Reliability Standard BAL-002-1 immediately prior to the effective date of BAL-002-2.

72. Public Reporting Burden: Our estimate below regarding the number of respondents is based on the NERC Compliance Registry as of April 15, 2016. According to the NERC Compliance Registry, there are 70 balancing authorities in the Eastern Interconnection, 34 balancing authorities in the Western Interconnection and one balancing authority in the Electric Reliability Council of Texas (ERCOT). The Commission bases individual burden estimates on the time needed for balancing authorities and reserve sharing groups to maintain, annually, the operating process and operating plan that are required in the Reliability Standard. These burden estimates are consistent with estimates for similar tasks in other Commission-approved Reliability Standards. The following estimates relate to the requirements for this final rule in Docket No. RM16-7-000.

<b>RM16-7-000 (BAL-002-2: Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event) <sup>86</sup></b>						
	<b>Number of Respondents (1)</b>	<b>Annual Number of Responses per Respondent (2)</b>	<b>Total Number of Responses (1)*(2)=(3)</b>	<b>Average Burden Hours &amp; Cost Per Response <sup>87</sup> (4)</b>	<b>Total Annual Burden Hours &amp; Total Annual Cost (3)*(4)=(5)</b>	<b>Cost per Respondent (\$) (5)÷(1)</b>
BA/RSG: <sup>88</sup> Develop and Maintain annually, Operating Process and Operating Plans	105	1	105	8 \$774	840 \$81,262	\$774
BA/RSG: Record Retention <sup>89</sup>	105	1	105	4 \$112	420 \$11,760	\$112
<b>TOTAL</b>			<b>210</b>		<b>1,260 \$93,022</b>	<b>\$886</b>

Title: FERC-725R, Mandatory Reliability Standard BAL-002-2.

<sup>86</sup> Reliability Standard BAL-002-2 applies to balancing authorities and reserve sharing groups. However, the burden associated with the balancing authorities complying with Requirements R1 and R3 is not included within this table because the Commission accounted for it under Commission-approved Reliability Standard BAL-002-1.

<sup>87</sup> The estimated hourly cost (salary plus benefits) of \$96.71 is an average based on Bureau of Labor Statistics (BLS) information ([http://www.bls.gov/oes/current/naics2\\_22.htm](http://www.bls.gov/oes/current/naics2_22.htm)) for an electrical engineer (\$64.29/hour) and a lawyer (\$129.12).

<sup>88</sup> BA=Balancing Authority; RSG=Reserve Sharing Group.

<sup>89</sup> \$28/hour, based on a Commission staff study of record retention burden cost.

Action: Collection of Information.

OMB Control No.: 1902-0268.

Respondents: Businesses or other for-profit institutions; not-for-profit institutions.

Frequency of Responses: On Occasion.

Necessity of the Information: This final rule approves Reliability Standard BAL-002-2, which is designed to ensure that a responsible entity, either a balancing authority or reserve sharing group, is able to recover from system contingencies by deploying adequate reserves to return its ACE to defined values and replacing the capacity and energy lost due to generation or transmission equipment outages. Reliability Standard BAL-002-2, Requirement R1 requires a responsible entity, either a balancing authority or reserve sharing group, experiencing a Reportable Balancing Contingency Event to deploy its contingency reserves to recover its ACE to certain prescribed values within the Contingency Event Recovery Period of 15 minutes. Requirement R2 requires a balancing authority or reserve sharing group to develop, review and maintain a process within its Operating Plans for determining its most severe single contingency and prepare to have contingency reserves equal to, or greater than, its most severe single contingency. Requirement R3 provides that, following a Reportable Balancing Contingency Event, the responsible entity shall restore its Contingency Reserve to at least its most severe single contingency, before the end of the Contingency Reserve Restoration Period of 90 minutes.

Internal Review: The Commission reviewed the Reliability Standard and has determined that it is necessary to implement section 215 of the FPA. The requirements of Reliability

Standard BAL-002-2 should conform to the Commission's expectation for generation and demand balance throughout the Eastern and Western Interconnections as well as within the ERCOT Region.

73. Interested persons may obtain information on the reporting requirements by contacting the following: Federal Energy Regulatory Commission, 888 First Street, NE Washington, DC 20426 [Attention: Ellen Brown, Office of the Executive Director, e-mail: DataClearance@ferc.gov, phone: (202) 502-8663, fax: (202) 273-0873].

## **VI. Environmental Analysis**

74. The Commission is required to prepare an Environmental Assessment or an Environmental Impact Statement for any action that may have a significant adverse effect on the human environment.<sup>90</sup> The Commission has categorically excluded certain actions from this requirement as not having a significant effect on the human environment. Included in the exclusion are rules that are clarifying, corrective, or procedural or that do not substantially change the effect of the regulations being amended.<sup>91</sup> The actions proposed here fall within this categorical exclusion in the Commission's regulations.

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<sup>90</sup> *Regulations Implementing the National Environmental Policy Act of 1969*, Order No. 486, FERC Stats. & Regs. ¶ 30,783 (1987).

<sup>91</sup> 18 CFR 380.4(a)(2)(ii).

## **VII. Regulatory Flexibility Act**

75. The Regulatory Flexibility Act of 1980 (RFA)<sup>92</sup> generally requires a description and analysis of final rules that will have significant economic impact on a substantial number of small entities. As shown in the information collection section, the Reliability Standard applies to 105 entities. Comparison of the applicable entities with the Commission's small business data indicates that approximately 23<sup>93</sup> are small business entities.<sup>94</sup> Of these, the Commission estimates that approximately five percent, or one of these 23 small entities, will be affected by the new requirements of the Reliability Standard.

76. The Commission estimates that the small entities affected by Reliability Standard BAL-002-2 will incur an annual compliance cost of up to \$20,355 (i.e., the cost of developing, and maintaining annually operating process and operating plans), resulting in a cost of approximately \$885 per balancing authority and/or reserve sharing group. These costs represent an estimate of the costs a small entity could incur if the entity is identified as an applicable entity. The Commission does not consider the estimated cost per small entity to have a significant economic impact on a substantial number of small

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<sup>92</sup> 5 U.S.C. 601-612.

<sup>93</sup> 21.73 percent of the total number of affected entities.

<sup>94</sup> The Small Business Administration sets the threshold for what constitutes a small business. Public utilities may fall under one of several different categories, each with a size threshold based on the company's number of employees, including affiliates, the parent company, and subsidiaries. For the analysis in this final rule, we are using a 500 employee threshold for each affected entity. Each entity is classified as Electric Bulk Power Transmission and Control (NAICS code 221121).

entities. Accordingly, the Commission certifies that this final rule will not have a significant economic impact on a substantial number of small entities.

### **VIII. Document Availability**

77. In addition to publishing the full text of this document in the Federal Register, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the Internet through the Commission's Home Page (<http://www.ferc.gov>) and in the Commission's Public Reference Room during normal business hours (8:30 a.m. to 5:00 p.m. Eastern time) at 888 First Street, NE, Room 2A, Washington, DC 20426.

78. From the Commission's Home Page on the Internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number of this document, excluding the last three digits, in the docket number field.

79. User assistance is available for eLibrary and the Commission's website during normal business hours from the Commission's Online Support at (202) 502-6652 (toll free at 1-866-208-3676) or e-mail at [ferconlinesupport@ferc.gov](mailto:ferconlinesupport@ferc.gov), or the Public Reference Room at (202) 502-8371, TTY (202) 502-8659. E-mail the Public Reference Room at [public.referenceroom@ferc.gov](mailto:public.referenceroom@ferc.gov).

### **IX. Effective Date and Congressional Notification**

80. These regulations are effective [INSERT DATE 60 days after publication in the FEDERAL REGISTER]. The Commission has determined, with the concurrence of the

Administrator of the Office of Information and Regulatory Affairs of OMB, that this rule is not a “major rule” as defined in section 351 of the Small Business Regulatory Enforcement Fairness Act of 1996.

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.



**APPENDIX****Commenters**

<b>Abbreviation</b>	<b>Commenter</b>
APS	Arizona Public Service Company
BPA	Bonneville Power Administration
CEA	Canadian Electricity Association
EI	Edison Electric Institute
Idaho Power	Idaho Power
IESO	Independent Electricity System Operator
Joint Commenters	Alberta Electric System Operator, California Independent System Operator, Electric Reliability Council of Texas, Inc., Midcontinent Independent System Operator, Inc., PJM Interconnection, L.L.C., Southwest Power Pool, Inc., and IESO
Naturener	Naturener USA, LLC
NERC	North American Electric Reliability Corporation
NRECA	National Rural Electric Cooperative Association
TVA	Tennessee Valley Authority